VD Fact Sheet

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

VD FACT SHEET

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Basic Statistics on the Venereal Disease Problem in the United States . . .

Fourteenth Revision

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service, Bureau of State Services
Communicable Disease Center
Venereal Disease Branch
Atlanta, Georgia

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INTRODUCTION

The VD Fact Sheet is intended to serve persons interested in public health and venereal disease problems as a handy source of basic statistics on the venereal diseases in the United States. The extent of the problem facing venereal disease control is measured by incidence and prevalence, while the costs of uncontrolled venereal disease and the frequency of psychoses and deaths from syphilis are indicative of the seriousness of the venereal disease problem. The results of case-finding are measured in terms of cases reported while the actual amount of case-finding effort by public facilities is described by the volume of diagnostic examinations and epidemiologic activity. Since there is no agent for immunizing the population, the only feasible means of controlling venereal disease are the finding and treating of cases. Therefore, facts about the efficacy of various types of treatment are very necessary to an understanding of venereal disease control.

Facts on these various measures of the venereal disease problem and program are presented in the text and tables which follow. The information is current as of the date of publication and supersedes any previously published data. Where no source is cited, the data presented are based on statistics collected by the Venereal Disease Program or upon estimates made by the Program. Where data are indicated as being for "fiscal years", the period runs from July 1 of the previous year to June 30 of the year indicated on the table. Rates per 100,000 population shown in this Fact Sheet are based on appropriate population estimates obtained from the Bureau of the Census.

INCIDENCE AND PREVALENCE

The incidence of a disease is defined as the number of new cases occurring in a given area within a specified period of time, usually a year, and prevalence as the number of cases existing at a point in time. Recent increases in the proportion of cases of syphilis reported by private physicians and the reorganization of syphilis contact investigation efforts to make casefinding services available to the private physician may have materially altered the ratio of reported cases to the number of cases that actually occurred. Since these changes are still in motion, the Venereal Disease Program does not find itself in a position to make confident estimates of either incidence or prevalence applicable to the current time.

TABLE 1

PREVALENCE RATES OF SYPHILIS DETECTED PER 1,000 MALE SELECTEES AND VOLUNTEERS EXAMINED

November 1940 to August 1941, By Race and Age

From time to time prevalence data have been obtained on large groups of persons. One of these groups, Selective Service Registrants examined for military service in World War II, was not only a large group but a fairly random selection of the young male population. The syphilis prevalence rates per 1,000 examined, by age and race, for the first two million registrants examined are shown below:

Age Groups	White	Nonwhite	Unknown	Total
18-20	11.1	105.8	29.7	55.1
21-25	10.2	191.7	25.3	30.1
26-30	21.0	294.8	46.6	54.4
31-35	37.9	357.8	80.6	83.5
36-40	44.4	375.6	103.2	101.9
TOTAL	17.6	245.2	41.0	46.1

In 1946, the prevalence of syphilis among examined sexual contacts of persons known to have primary or secondary syphilis was approximately 50 percent for white males, 51 percent for white females, 55 percent for nonwhite males, and 59 percent for nonwhite females. More recent data available for the total of all contacts to primary or secondary syphilis indicate that 30 percent of contacts examined in fiscal 1957 were infected compared to 54 percent in 1946.

COSTS OF UNCONTROLLED SYPHILIS

The statistics presented in Table 2 indicate the toll imposed by syphilis upon the manpower and economy of the country.

The estimate of man-years of disability for institutionalization for syphilitic insanity has been based on total number of patients in mental institutions and the proportion diagnosed as having syphilitic psychoses in institutions caring for over half the mental patients in the country. Patients in State, county, private, and Veterans Administration hospitals for the permanent care of the insane are included.

The cost of maintenance is based upon the number of patients with syphilitic psychoses in tax supported institutions and average per patient maintenance cost for the three percent of patients with syphilitic psychoses maintained in private institutions has not been included. The loss of income and tax payments reflects the probable earnings and tax payments of male patients had they been self-supporting in 1955. This is based on the average earnings per employed worker and average income tax payments per adult for that year.

Disability attributed to cardiovascular syphilis and to locomotor ataxia is based on conservative estimates of the prevalence of these late manifestations of syphilis.

The loss of life expectancy indicates the loss of future years of life for persons dying of syphilis in 1955 based on the expected years of life remaining to persons of that age, race and sex. The loss of income indicates the possible earnings of these persons for the productive years of life lost to age 65 at the average 1955 per adult income.

While disability and death from syphilis have been diminishing in recent years, costs and losses per case have been rising. As a result of this, total costs and income losses from syphilitic disability and deaths remain high compared to previous estimates.

On the basis of findings in a research study conducted in Macon county, Alabama, it has been estimated that the life expectancy of a Negro male between the ages of 25 and 50 years, infected with syphilis and receiving no appreciable treatment for his infection, is reduced by about 17 percent. a/

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a/ Shafer, J. K.; Usilton, Lida J.; Gleeson, Geraldine A.: Untreated Syphilis in the Male Negro: A prospective study of the effect on life expectancy. Public Health Reports, 69: 684-690, July 1954. Milbank Memorial Fund Quarterly, 32: 262-274, July 1954.

TABLE 2

ESTIMATED ANNUAL COSTS OF UNCONTROLLED SYPHILIS a/

Man-years of Syphilis Disability per Year	
Institutionalization for syphilitic insanity (1955)	33,000
Disability from cardiovascular syphilis, including aneurysm (1955)	6,600
Disability from locomotor ataxia (1955)	1,000
Disability from syphilitic blindness (1951)	26,000
Economic Costs of Syphilitic Psychoses and Syphilitic Blindness per Year	
Maintenance of Patients with syphilitic psychoses (1955)	$46,684,000
Loss of income by males with syphilitic psychoses (1955)	95,657,000
Loss of State and Federal income tax payments from patients with syphilitic psychoses (1955)	9,075,000
Maintenance of syphilitic blind (1951)	12,500,000
Loss of Life Expectancy Due to Syphilis in Man-years per Year (1955)	
White Male	30,091
White Female	11,354
Non-white Male	19,641
Non-white Female	9,209
Total Population	70,295
Loss of Income to Age 65 at 1955 per Adult Income Rate	$76,161,511

a/ Revised estimates based on most recent available data for years indicated.

REPORTED MORTALITY AND INSANITY DUE TO SYPHILIS

Mortality statistics are compiled by the National Office of Vital Statistics from duplicates of death certificates filed with State or local registrars. Mortality rates for syphilis are calculated by dividing the number of deaths in a given year by the population for that year and multiplying by 100,000 (rate per 100,000 population). The infant mortality rate for syphilis for a given year is obtained by dividing the deaths due to syphilis among children under one year of age by the number of live births in that year multiplied by 1,000 (rate per 1,000 live births).

Since deaths from syphilis represent case - finding and treatment failures, mortality due to syphilis may be considered an inverse measure of the success of the syphilis control program.

The method of classifying deaths is revised decennially by international agreement. These revisions have at times affected the continuity of syphilis mortality statistics. "The Sixth Revision of the International Lists of Causes of Death" which became effective in 1949 reduced reported syphilis deaths by about 26 percent. (Vital Statistics in the U. S., 1949 P. H. S., and Statistical Letter No. 23, August 1949, V. D. Division.) Mortality rates given in this Fact Sheet have been adjusted to the basis of the Sixth Revision for all years previous to 1949, using provisional comparability ratios. Infant mortality was affected very little by the Sixth Revision, and no adjustment was made.

Insanity due to syphilis is measured by the rate of first admissions to mental hospitals because of syphilis. Excluded are admissions to psychopathic hospitals which provide only temporary care and admission to Veterans Administration facilities. The number of admissions is obtained from "Patients in Mental Institutions" published by the National Institute of Mental Health. Since only first admissions are included in the rate, the figures over a period of years represent a measure of the trend of incidence of syphilitic insanity.

Data on mortality and insanity due to syphilis are presented in Table 3.

TABLE 3

REPORTED MORTALITY AND INSANITY DUE TO SYPHILIS
Continental U. S.
1940 - 1956

Calendar Year	Syphilis Mortality Rates per 100,000 Population a/			Infant Mortality Due to Syphilis, Rates per 10,000 Live Births			First Admissions to Mental Hospitals Due to Syphilis Rates per 100,000 Population b/
	Total	White	Nonwhite	Total	White	Nonwhite	Total
1940	10.7	7.3	40.2	5.30	2.50	25.20	6.1
1941	9.9	6.9	35.2	4.10	1.80	21.00	6.1
1942	9.0	6.4	31.4	3.00	1.50	15.00	6.1
1943	9.0	6.4	41.2	2.52	1.18	12.76	5.8
1944	8.3	5.8	29.3	2.67	1.17	13.50	5.6
1945	7.9	5.6	27.3	2.50	1.07	12.59	5.5
1946	6.9	4.9	23.8	1.64	.66	9.20	4.7
1947	6.5	4.7	22.1	1.40	.51	8.21	4.2
1948	5.9	4.2	19.9	1.24	.49	6.31	3.7
1949	5.8	4.2	19.2	.84	.29	4.41	3.2
1950	5.0	3.7	16.1	.57	.24	2.59	2.6
1951	4.1	3.0	13.4	.34	.12	1.73	2.1
1952	3.7	2.7	11.4	.24	.10	1.14	1.8
1953	3.3	2.4	10.9	.14	.04	.77	1.5
1954	3.0	2.3	9.2	.11	.03	.54	1.3
1955	2.4	1.7	7.9	.08	.03	.41	1.0
1956 c/	2.5	----	----	----	----	----	---

a/ Sixth Revision, International Lists of Causes of Death; see Mortality, Page 5 for explanation.
b/ Does not include admissions to V. A. and psychopathic hospitals; rate based on population of area reporting.
c/ Estimated

Source: Mortality and Natality Data, National Office of Vital Statistics
First Admissions to Mental Hospitals, National Institute of Mental Health
Rates based on population estimates of the Bureau of the Census

REPORTED CASES OF VENEREAL DISEASES

All States require that syphilis cases coming to medical attention be reported to the State or local health officer. Gonorrhea is a reportable disease in all States except one, and the other venereal diseases are reportable in most States. Quarterly, each State submits to the Public Health Service a summary of the cases reported to it. All cases not previously reported, regardless of duration, are to be included in the report. The reported morbidity, as reported cases are sometimes called, indicates the volume of successful case finding.

The trend of reported cases of early syphilis (or reported case rates) over a period of years may be indicative of incidence trends if no significant changes in case-finding effort have occurred. Reported cases of syphilis in the later stages may be considered as an indication of past case-finding failure as well as present success. Trends in reported cases must be interpreted with caution since changes in case-finding effort are reflected in morbidity data just as much as changes in incidence and prevalence.

Reported cases of venereal diseases are shown in Tables 4 through 8.

HEALTH DEPARTMENT CASE-FINDING ACTIVITIES

The correct interpretation of case-finding success depends upon a knowledge of the volume of case-finding effort. Table 9 shows the volume of case-finding effort in public clinics and cases of venereal disease found through these efforts. Total activity is indicated by the number of diagnostic examinations performed and investigations completed. The section of contact investigation indices indicate the volume of contacts named and the success in finding cases of syphilis on a per patient basis. It should be noted that at least one infected contact should be identified for each case of primary or secondary syphilis.

Table 4

CASES OF SYPHILIS AND GONORRHEA REPORTED TO THE PUBLIC HEALTH SERVICE BY STATE HEALTH DEPARTMENTS, AND RATES PER 100,000 POPULATION
All Reporting Areas in Continental U. S.
1919 - 1957

Fiscal Year	SYPHILIS		GONORRHEA	
	Cases	Rates per 100,000	Cases	Rates per 100,000
1919	100,466	113.2	131,193	147.8
1920	142,869	145.3	172,387	175.4
1921	184,090	172.3	189,927	177.7
1922	171,824	157.7	152,959	140.4
1923	172,258	156.2	156,826	142.2
1924	194,936	174.2	161,676	144.5
1925	201,692	181.2	166,208	149.3
1926	205,595	196.1	164,808	157.2
1927	196,457	171.9	160,793	140.7
1928	185,437	174.2	147,219	138.3
1929	195,559	169.2	156,544	135.4
1930	213,309	185.4	155,875	135.5
1931	229,720	197.4	155,895	134.0
1932	242,128	208.2	154,051	132.5
1933	238,656	193.4	149,823	121.4
1934	231,129	186.7	153,542	124.1
1935	255,856	205.6	162,763	130.8
1936	267,717	212.6	163,465	129.8
1937	336,258	264.3	182,460	143.4
1938	480,140	372.0	198,439	153.8
1939 a/	478,738	367.1	182,314	139.8
1940	472,900	359.7	175,841	133.8
1941	485,560	368.2	193,468	146.7
1942	479,601	363.4	212,403	160.9
1943	575,593	447.0	275,070	213.6
1944	467,755	367.9	300,676	236.5
1945	359,114	282.3	287,181	225.8
1946	363,647	271.7	368,020	275.0
1947	372,963	264.6	400,639	284.2
1948	338,141	234.7	363,014	252.0
1949	288,736	197.3	331,661	226.7
1950	229,723	154.2	303,992	204.0
1951	198,640	131.8	270,459	179.5
1952	168,734	110.8	245,633	161.3
1953	156,099	100.8	243,857	157.4
1954	137,876	87.5	239,661	152.0
1955	122,075	76.0	239,787	149.2
1956	126,219	77.1	233,333	142.4
1957	135,542	81.2	216,476	129.8

a/ Beginning in 1939, all States are included in the reporting area.

Note: Military cases excluded after 1940.
Rates based on population estimates by the Bureau of the Census.

TABLE 5
CASES OF VENEREAL DISEASES REPORTED TO THE PUBLIC HEALTH SERVICE
FISCAL YEARS 1948 - 1957
(Known Military Cases Are Excluded)

Fiscal Year	SYPHILIS					GONORRHEA	OTHER VENEREAL DISEASES		
	Total Syphilis a/	Primary and Secondary	Early Latent	Late and Late Latent	Congenital		Chancroid	Granuloma Inguinale	Lympho-Granuloma Venereum
				In States and Territories					
1948	345,992	81,428	101,399	125,938	14,510	372,167	8,853	2,325	2,518
1949	296,551	54,919	87,994	123,890	15,667	342,863	7,363	2,618	2,182
1950	238,640	32,838	68,392	115,363	15,062	313,517	5,890	2,022	1,653
1951	208,137	18,709	55,734	110,864	14,638	278,898	4,769	1,645	1,341
1952	176,462	12,447	40,646	105,389	10,426	253,984	3,969	1,089	1,237
1953	162,805	9,855	33,831	103,970	8,986	251,986	3,579	791	1,111
1954	141,838	7,898	25,834	96,017	7,649	245,077	3,348	613	925
1955	124,925	6,698	22,232	86,392	5,779	244,363	2,937	590	883
1956	128,645	6,885	20,591	91,252	5,702	238,568	2,366	420	611
1957 b/	137,500	6,355	20,792	101,793	5,597	220,614	1,887	352	463
				In Continental United States					
1948	338,141	80,528	97,745	123,972	13,309	363,014	8,631	2,315	2,494
1949	288,736	54,248	84,331	121,931	14,295	331,661	7,218	2,611	2,170
1950	229,723	32,148	64,786	112,424	13,446	303,992	5,796	2,017	1,635
1951	198,640	18,211	52,309	107,133	12,836	270,459	4,707	1,637	1,332
1952	168,734	11,991	38,365	101,920	9,240	245,633	3,837	1,069	1,235
1953	156,099	9,551	32,287	100,195	8,021	243,857	3,490	785	1,103
1954	137,876	7,688	24,999	93,601	7,234	239,661	3,294	607	917
1955	122,075	6,516	21,553	84,741	5,515	239,787	2,863	584	875
1956	126,219	6,757	20,014	89,851	5,535	233,333	2,322	419	602
1957 b/	135,542	6,283	20,346	100,514	5,452	216,476	1,860	348	449

a/ Includes "Stage of Syphilis Not Stated."
b/ Provisional.

TABLE 6

REPORTED SYPHILIS CASE RATE PER 100,000 POPULATION
FISCAL YEARS 1941 - 1957

Fiscal Year	Total Including Not Stated	Primary and Secondary	Primary, Secondary and Early Latent	Congenital	Late and Late Latent
			Continental U. S. Civilians		
1941	368.2	51.7	134.4	13.4	153.9
1942	363.4	57.1	145.1	12.8	153.1
1943	447.0	63.8	179.8	12.6	195.7
1944	367.9	61.7	158.5	10.7	159.6
1945	282.3	60.5	140.5	9.7	111.8
1946	271.7	70.9	151.6	9.0	93.6
1947	264.6	75.6	152.0	8.7	86.5
1948	234.7	55.9	123.8	9.2	86.1
1949	197.3	37.1	94.7	9.8	83.3
1950	154.2	21.6	65.1	9.0	75.5
1951	131.8	12.1	46.8	8.5	71.1
1952	110.8	7.9	33.1	6.1	66.9
1953	100.8	6.2	27.0	5.2	64.7
1954	87.5	4.9	20.7	4.6	59.4
1955	76.0	4.1	17.5	3.4	52.7
1956	77.1	4.1	16.4	3.4	54.8
1957 a/	81.2	3.8	16.0	3.3	60.2

a/ Provisional

TABLE 7

REPORTED VENEREAL DISEASE CASE RATES PER 100,000 POPULATION BY COLOR AND SEX
CONTINENTAL U. S. CIVILIANS
Fiscal Years 1953 - 1957

Disease, Stage and Year		TOTAL			WHITE			NONWHITE		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Total Syphilis (Includes Not Stated)	1953	100.8	103.2	98.5	41.9	47.4	36.6	596.4	577.7	613.8
	1954	87.5	90.1	84.9	36.8	42.0	31.8	510.8	497.2	523.4
	1955	76.0	79.2	72.9	33.9	39.1	29.0	424.3	415.6	432.4
	1956	77.1	81.1	73.2	33.2	38.3	28.3	437.9	437.2	438.6
	1957 a/	81.2	92.3	70.7	38.0	50.0	26.5	437.6	444.9	430.8
Primary and Secondary Syphilis	1953	6.2	7.5	4.9	2.7	3.7	1.7	35.6	40.2	31.4
	1954	4.9	6.1	3.7	2.1	3.0	1.3	28.0	32.1	24.2
	1955	4.1	5.1	3.0	1.8	2.6	1.1	22.5	26.4	19.0
	1956	4.1	5.2	3.1	1.6	2.4	0.9	25.0	29.1	21.2
	1957 a/	3.8	5.0	2.6	1.6	2.4	0.8	21.8	26.3	17.6
Early Latent Syphilis	1953	20.8	17.5	24.0	6.3	6.1	6.6	142.9	115.3	168.5
	1954	15.9	13.1	18.5	4.9	4.7	5.1	107.2	83.7	129.0
	1955	13.4	11.6	15.1	4.7	5.0	4.5	85.4	66.8	102.7
	1956	12.2	10.6	13.7	4.1	4.2	4.1	78.6	64.3	92.0
	1957 a/	12.2	12.9	11.5	5.3	7.2	3.5	68.9	60.1	77.2
Late and Late Latent Syphilis	1953	64.7	69.4	60.2	28.9	34.0	24.0	366.0	371.0	361.3
	1954	59.4	64.1	54.9	26.6	31.3	22.1	333.1	341.5	325.3
	1955	52.7	57.3	48.4	24.7	29.2	20.4	285.5	293.8	277.7
	1956	54.8	59.9	50.0	24.8	29.5	20.4	302.1	313.9	291.2
	1957 a/	60.2	70.1	50.9	28.7	38.3	19.5	320.0	334.9	306.2
Congenital Syphilis	1953	5.2	4.5	5.9	2.1	1.5	2.6	31.3	29.4	33.1
	1954	4.6	3.7	5.4	1.8	1.3	2.2	27.9	24.1	31.5
	1955	3.4	2.6	4.2	1.6	1.1	2.1	18.5	15.2	21.6
	1956	3.4	2.6	4.1	1.5	1.0	2.0	18.9	15.8	21.7
	1957 a/	3.3	2.5	4.0	1.4	1.0	1.8	18.6	15.3	21.6
Gonorrhea	1953	157.4	216.4	101.7	38.3	52.6	24.8	1159.4	1609.2	742.2
	1954	152.0	214.3	93.0	35.6	50.8	21.2	1124.4	1597.7	685.8
	1955	149.2	209.9	91.7	34.3	49.3	20.0	1101.8	1557.9	678.8
	1956	142.4	201.0	86.8	32.4	47.3	18.1	1048.5	1481.6	645.4
	1957 a/	129.8	185.3	76.9	29.3	42.7	16.6	956.8	1374.4	568.3

a/ Provisional.

Population used to calculate rates are from estimates by the Bureau of the Budget.

TABLE 8

REPORTED VENEREAL DISEASE CASE RATES PER 100,000 POPULATION
Continental U. S. Civilians by State
Fiscal Year 1957

State	SYPHILIS		GONORRHEA	OTHER VENEREAL DISEASES
	Total	All Early a/		
Alabama	45.34	17.46	115.47	3.53
Arizona	207.25	47.63	200.58	1.74
Arkansas	152.59	15.00	260.35	.90
California	100.64	25.27	123.04	.77
Colorado	32.31	8.46	49.68	.83
Connecticut	39.60	11.53	61.93	.10
Delaware	254.06	41.63	104.32	3.81
District of Columbia	232.15	47.92	1154.45	8.78
Florida	198.97	39.40	271.88	9.31
Georgia	108.53	40.91	353.54	12.26
Idaho	15.94	8.21	40.74	.00
Illinois	60.95	16.18	213.60	.32
Indiana	38.52	5.70	46.30	.37
Iowa	48.42	3.24	23.09	.37
Kansas	69.00	4.22	78.36	1.21
Kentucky	64.02	4.52	100.57	.33
Louisiana	218.26	24.38	191.36	3.92
Maine	5.25	1.57	9.05	.00
Maryland	87.74	16.78	256.55	1.68
Massachusetts	40.89	10.16	32.08	.14
Michigan	63.77	14.55	118.13	1.05
Minnesota	5.78	1.27	22.71	.03
Mississippi	64.21	9.79	356.32	7.32
Missouri	111.39	11.72	123.44	1.80
Montana	48.82	6.32	36.49	.32
Nebraska	26.96	1.15	47.79	.00
Nevada	59.41	19.67	110.04	5.02
New Hampshire	26.71	3.61	7.76	.00
New Jersey	93.69	11.65	78.67	.53
New Mexico	194.82	30.84	108.85	4.30
New York	123.02	15.20	83.01	1.05
North Carolina	103.81	25.24	245.83	3.60
North Dakota	5.49	.30	28.66	.00
Ohio	83.49	15.87	77.60	.34
Oklahoma	62.89	9.76	183.22	1.18
Oregon	38.43	7.30	30.14	.12
Pennsylvania	30.34	6.12	44.01	.39
Rhode Island	60.68	3.52	23.49	.00
South Carolina	302.35	83.94	270.73	4.82
South Dakota	23.95	6.82	64.30	.00
Tennessee	52.15	13.89	374.57	2.96
Texas	55.30	19.73	158.79	1.85
Utah	28.68	4.82	28.31	.25
Vermont	13.90	1.63	14.99	.00
Virginia	104.53	22.93	193.44	1.86
Washington	18.67	3.40	43.62	.39
West Virginia	76.39	7.01	53.73	.20
Wisconsin	35.22	5.16	22.13	.00
Wyoming	23.30	4.86	20.39	.00
Total Continental U. S.	81.24	15.96	129.75	1.59

a/ Includes primary, secondary and early latent syphilis.
Source: Cases - Morbidity reports submitted to PHS.
Population - estimates prepared by Bureau of the Census.

TABLE 9

HEALTH DEPARTMENT CASE-FINDING ACTIVITIES
Fiscal Years 1952 - 1957

Clinic and Epidemiologic Data	1952	1953	1954	1955	1956	1957
Diagnostic examinations in public clinics	2,318,786	2,593,479	2,250,588	1,882,576	1,758,325	1,960,524
Percent of examinations in which one or more venereal diseases were found	14.5	13.4	14.1	16.1	15.6	14.3
Number of contact investigations completed	291,253	297,823	159,050	227,372	224,308	211,717
Number of other suspect investigations completed	145,906	168,834	131,324	148,279	150,629	178,834
Contact investigation indices a/:						
Approximate number of contacts obtained from each primary and secondary syphilis patient (contact index)	3.04	2.79	3.26	3.00	3.53	3.42
Approximate number of syphilis infections identified in the contacts of each primary and secondary patient (epidemiologic index)	.68	.62	.73	.76	.90	.86
Approximate number of syphilis infections brought to treatment in the contacts of each primary and secondary patient (brought-to-treatment index)	.39	.36	.45	.41	.50	.47
Approximate number of primary and secondary syphilis brought to treatment in the contacts of each primary and secondary patient (lesion - to - lesion index)	.20	.20	.25	.22	.27	.27

a/ Indices for 1954-1957 computed on a slightly different basis.

REPORTED MORBIDITY BY AGE

Reported cases of infectious venereal diseases by age for calendar year 1956 are presented below:

TABLE 10

REPORTED PRIMARY AND SECONDARY SYPHILIS AND GONORRHEA RATES PER 100,000 POPULATION BY AGE, CONTINENTAL UNITED STATES, CALENDAR YEAR

Age	Primary and Secondary Syphilis	Gonorrhea	Total Infectious Venereal Disease
0 - 9	.03	3.21	3.20
10 - 14	.57	18.02	18.17
15 - 19	10.13	413.71	418.05
20 - 24	18.56	778.32	814.88
25 - 29	11.32	427.08	449.23
30 - 34	7.12	222.31	234.81
35 - 39	3.99	111.55	116.35
40 - 44	2.65	54.24	56.99
45 - 49	2.14	29.45	31.67
50 - Over	.71	7.37	8.05
Total	3.87	135.76	139.63

TABLE 11

REPORTED CASES OF CONGENITAL SYPHILIS, BY AGE
CONTINENTAL U. S.

Age	1954		1955		1956		1957	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0-1 Year	182	3.9	164	4.8	127	4.1	108	3.3
1-4 Years	173	3.7	77	2.2	39	1.3	47	1.4
5-9 Years	658	14.2	279	8.1	137	4.4	114	3.5
10 Years & Over	3,628	78.2	2,919	84.9	2,795	90.2	2,998	91.8
Total, Known Age	4,641	100.0	3,439	100.0	3,098	100.0	3,267	100.0
Unknown Age	2,593		2,076		2,437		2,185	
GRAND TOTAL	7,234		5,515		5,535		5,452	

REPORTED CASES UNDER 1 YEAR OF AGE

Reported case rates of congenital syphilis under 1 year of age per 10,000 live births was .7 in the fiscal year 1954, .7 in the fiscal year 1955, and .6 in fiscal year 1956, and .4 in the fiscal year 1957.

INFANT MORTALITY DUE TO SYPHILIS - See Table 3.

PENICILLIN IN THE TREATMENT OF SYPHILIS

CONGENITAL SYPHILIS

A minimum of 1,500,000 units of procaine penicillin G in oil with 2 percent aluminum monostearate (PAM) is recommended in the treatment of early congenital syphilis (less than 2 years). Late congenital syphilis should be treated with the same schedules as for comparable manifestations of acquired syphilis.

The earlier that penicillin therapy is instituted for congenital syphilis, the more satisfactory the results. Results, 18–21 months after treatment, are shown in Table 12 by child's age at time of treatment. All types and amounts of penicillin are included.

TABLE 12

RESULTS OF PENICILLIN THERAPY FOR EARLY CONGENITAL SYPHILIS, 18–21 MONTHS POSTTREATMENT, BY AGE OF CHILD AT TIME OF TREATMENT

Age at Time of Treatment	Number		Percent		Failure	
	Treated	Observed	Seronegative	Seropositive	Serologic	Clinical
Under 3 Months	107	38	92.1	-	1.7	6.2
3–5 Months	139	52	95.1	3.8	1.1	-
6–11 Months	96	44	80.7	17.9	-	1.4
12–24 Months	130	47	42.4	52.6	5.0	-

EARLY SYPHILIS

Benzathine penicillin G and procaine penicillin G in oil with 2 percent aluminum monostearate (PAM) are the principal penicillin preparations used for the treatment of early syphilis. Since benzathine penicillin G maintains a detectable blood level for a much longer period of time than PAM, a smaller total dosage is required for satisfactory results. For the treatment of early syphilis the recommended dosages are 2,400,000 units of benzathine penicillin G or 4,800,000 units of PAM.

Results of treatment for secondary syphilis with these two preparations are shown in Table 13.

TABLE 13

PENICILLIN IN THE TREATMENT OF SECONDARY SYPHILIS

Results 2 Years Following Treatment

Schedule of Treatment	Total Cases	Cumulative Percent Retreated			Percent Seronegative*
		Total	Clinical or Serologic Failure	Reinfection	
Benzathine penicillin G 2,500,000 units 1 injection	155	5.5	0.9	4.6	94.5 ± 2.4
Procaine Penicillin G and Aluminum Monostearate 4,800,000 units					
Single session	166	7.7	3.8	3.9	91.0 ± 2.6
2-4 sessions	415	11.7	7.8	3.9	88.3 ± 2.1

* Or less than 4 Kahn units.

NEUROSYPHILIS

A cooperative study conducted by the Public Health Service and leading neurosyphilologists in the United States has demonstrated that penicillin is the most effective treatment yet known for neurosyphilis.

Asymptomatic neurosyphilis - among 765 patients with asymptomatic neurosyphilis, approximately 75 percent of whom were treated with a minimum of 4,800,000 units of penicillin, only one bona fide progression to symptomatic neurosyphilis was observed; eleven other patients exhibited minor neurologic changes. In contrast, among 467 patients treated with metal chemotherapy, 29 progressed to symptomatic neurosyphilis and an additional 15 showed minor neurologic changes.

Paresis - Six hundred and twenty-nine patients were treated for paresis with penicillin only, 60 percent of whom received a minimum of 6,000,000 units. Paresis was diagnosed as severe in 330, as moderately severe in 141, and as mild in 158. Five years after treatment, forty-two percent of those with severe psychosis were in remission or showed significant improvement, forty-five percent remained unchanged, and only 13 percent had progressed or died from paresis. Progression or death from paresis occurred in 7.0 percent of those with moderately severe psychosis and in less than one percent of those with mild psychosis. Further proof of the effectiveness of penicillin is the fact that among those who survived, one-third who had been institutionalized and two-thirds of those who had been unable to work at time of treatment, were gainfully employed 5 years later.

SYPHILIS IN PREGNANCY

In two studies, comprising 528 infants born to treated syphilitic mothers, approximately 98 percent of the children were nonsyphilitic (Table 14). The percentage varied slightly by stage of mother's syphilis at time of treatment during pregnancy.

TABLE 14

OUTCOME OF PREGNANCY BY STAGE OF SYPHILIS AT TIME OF MOTHER'S TREATMENT DURING PREGNANCY

Stage of Disease at Time of Mother's Treatment with Penicillin	Total Live Births		Nonsyphilitic		Syphilitic	
	Number	Percent	Number	Percent	Number	Percent
A. Aqueous Penicillin – 2,400,000 units or more						
Primary or Secondary	160	100.0	156	97.5	4	2.5
Early Latent	90	100.0	89	98.8	1	1.1
TOTAL	250	100.0	245	98.0	5	2.0
B. PAM – One Session – 30,000 – 80,000 units per kilogram						
Primary or Secondary	48	100.0	45	93.8	3	6.2
Early Latent	174	100.0	172	98.9	2	1.1
Late (Latent, CNS, Congenital)	56	100.0	56	100.0	0	0.0
TOTAL	278	100.0	273	98.2	5	1.8
Total A and B						
Primary or Secondary	208	100.0	201	96.6	7	3.4
Early Latent	264	100.0	261	98.9	3	1.1
Late (Latent, CNS, Congenital)	56	100.0	56	100.0	0	0.0
TOTAL	528	100.0	518	98.1	10	1.9

In the absence of relapse or reinfection, a woman treated with penicillin for syphilis will not require further treatment in the event of pregnancy. The two syphilitic children reported in Table 15 were born to mothers with an unsatisfactory course following treatment for secondary syphilis - one was reinfected, the other experienced a serologic relapse.

TABLE 15

OUTCOME OF PREGNANCY IN WOMEN TREATED FOR SYPHILIS PRIOR TO, BUT NOT DURING, PREGNANCY

	Total Live Births		Nonsyphilitic		Syphilitic	
	Number	Percent	Number	Percent	Number	Percent
Series A	154	100.0	153	99.4	1	0.6
Series B	229	100.0	228	99.6	1	0.4
TOTAL	383	100.0	381	99.5	2	0.5

PENICILLIN IN THE TREATMENT OF GONORRHEA

For the treatment of gonorrhea, 600,000 units of penicillin has long been the recommended dosage. This dosage was established through numerous studies of penicillin in the treatment of gonorrhea in the male. The apparent failure to control gonorrhea has raised the question of the possible inadequacy of 600,000 units of penicillin for the treatment of gonorrhea in the female. That this may be the case is indicated by the results of a study (Table 16) conducted at Columbia, South Carolina, where alternate female patients were treated with 600,000 and 1,800,000 units of PAM.

TABLE 16

COMPARISON OF 600,000 AND 1,800,000 UNITS OF PAM IN THE TREATMENT OF GONORRHEA IN THE FEMALE

Results of cultures following treatment	600,000 units		1,800,000 units	
	Number	Percent	Number	Percent
Positive	13	16.8	4	3.8
Two consecutive negatives	58	75.3	94	88.7
Single negative	6	7.8	8	7.5
TOTAL	77	100.0	106	100.0

In 1957, in the Venereal Disease Clinic of the Memphis and Shelby County Health Department, the administration of 600,000 units of PAM plus 1.2 million units of benzathine penicillin G to all female patients and contacts resulted in a marked decline in the number of females who were renamed within 60 days following their initial infection. When the same dose was applied to male cases there was a sharp decline in males attending the clinic. When this treatment was continued in the females, but the benzathine penicillin G was eliminated from the treatment of males, the attendance of males in the clinic increased. Apparently a dosage greater than 600,000 is indicated, also, for the treatment of gonorrhea in the male.

PENICILLIN REACTIONS

Among 19,510 patients treated in venereal disease clinics, only 116 experienced reactions to penicillin therapy, an incidence of 6 per 1,000 treated. Reactions, in order of frequency, were classified as follows:

Urticaria	96
Serum sickness	5
Dermatitis medicamentosa	5
Anaphylaxis	4
Generalized pruritus	2
Dyspnea	2
Erythema multiforme-like bullous lesions	1
Dermatophytid	1
Nausea and vomiting	1

Some of the factors affecting the incidence of reactions are shown in Table 17. Patients treated for syphilis had a reaction rate of 22.4 per 1,000 as compared with a rate of 2.4 per 1,000 treated for gonorrhea. The higher reaction rate among patients treated for syphilis is attributable to the fact that these patients received from 2,400,000 to 9,600,000 units, or from 4 to 16 times the generally recommended dosage for gonorrhea. The incidence of reactions was greater in the Caucasian race than in the Negro, greater in females than in males. Patients 10-29 years of age tolerated penicillin better than patients in the older age groups, but patients 50 years of age and older demonstrated a greater tolerance than patients 30 to 49 years of age. The greatest incidence of reactions (99 per 1,000) occurred among patients who had previously reacted to penicillin. Among patients who reported no reaction to previous penicillin, only 3.9 per 1,000 showed side effects from subsequent penicillin therapy. In contrast, 9.1 per 1,000 patients who were treated with penicillin the first time reacted to it.

The group of patients studied was comprised principally of those exhibiting the greatest tolerance to penicillin, namely, young Negroes treated on low-dosage schedules who had received previous penicillin without difficulty. The reaction incidence of 6 per 1,000 patients treated is considerably lower, therefore, than the reaction rate which might occur in general practice.

TABLE 17

INCIDENCE OF REACTIONS TO PENICILLIN IN A VENEREAL DISEASE CLINIC POPULATION

Classification	Total Cases	Cases reacting	
		Number	Rate per 1,000
Grand Total	19,510	116	5.95
Epidemiologic treatment	3,757	10	2.66
Gonorrhea	12,026	29	2.41
Syphilis	3,442	77	22.37
PAM	12,179	97	7.96
Benzathine penicillin G	7,109	17	2.39
White - Male	965	7	7.25
Female	670	7	10.45
Negro - Male	9,548	32	3.35
Female	7,738	51	6.59
10-19 years of age	3,908	12	3.07
20-29	9,512	37	3.89
30-39	3,674	34	9.25
40-49	1,252	21	16.77
50 years and over	1,012	11	10.87
Previous penicillin - Reacted	121	12	99.17
Did not react	14,214	56	3.94
No previous penicillin	3,750	34	9.07

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